

IDEALIST 0783
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MEMORANDUM TO: [REDACTED]

SUBJECT: Crew Management Program

18 JUN
1962

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During the TDY period, 21 May-27 May 62, the undersigned visited North Base, Edwards AFB, to discuss with [REDACTED] and [REDACTED] the over-all concept of crew management. [REDACTED] participated in some of the discussions. Primary areas of interest were these:

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- I. Need for a crew management program
- II. Type of program to be implemented
- III. Facilities to support such program

I. All of the participants in the discussions, with the exception of the pilots, themselves, clearly see the indication for a program whereby the optimal condition of the pilot can be guaranteed, in so far as possible, for any given mission. This need becomes even clearer when missions approaching a duration of sixteen hours are considered.

The pilots' attitudes seemed more or less stereotyped to the undersigned. Their remarks, generally, carried the following connotations:

- A. They have been in this program for six to seven years, and have been constantly conditioning themselves for any and all missions.
- B. Very little, if anything, can be gained by implementing any form of crew management policies; they think they know what is best for them and assume that they do not need anyone telling them.
- C. They resent being told they "have to do anything," especially if they are not convinced of the real need or indication for such.
- D. They strongly resent any suggestion of sleeping in prepared quarters prior to missions, but prefer to sleep at home because of reasons ranging from "familiarity of environment" to interference with sleep by sonic booms, to "I'd just rather sleep at home."
- E. Some form of voluntary exercise programs might be complied with by some of the pilots.

USAF review(s) completed.

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F. The real need for concern should lie in the forward staging areas, and not at North Base.

G. They are unhappy with some of the present, in-flight, semi-liquid food, due to an undesirable taste. They request that this be investigated, and if any "brand-name" change has been made, to return to the former manufacturer or packager.

It is the firm opinion of the undersigned that not one driver has actually proven himself for missions of fifteen or sixteen hours by virtue of having flown six to ten hour missions during the past six to seven years. Their capabilities for this type mission remain to be proven; even though little doubt exists that the capabilities are present. The entire management program is designed to increase pilot safety and comfort and not to impose rigid rules which would defeat the purposes of any such proposals. The undersigned emphatically feels that even though the pilots are very intelligent, mature, well-motivated adults who are vitally interested in their own welfare, they are not in a position to determine what is ultimately best for themselves from a physiological standpoint. If the contrary were true, the need for a flight surgeon would perhaps be eliminated, altogether.

Since it has been stipulated in Project Headquarters Manual 50-1161-1, "Interim U-2 Pilot Physical Conditioning Program," that this program will apply primarily to missions in excess of ten hours, the questions naturally arise, "Is there a necessity for proving capability of flying missions of such duration, or could the mission be better accomplished by staging from forward areas?" And, "What will be the relative frequency of flights of such duration -- both training and operational?" These questions should be answered before concrete decisions are made. If only one to two missions per year per pilot are required, as stipulated by the Edwards' group, the undersigned is of the opinion that justification for construction of elaborate facilities of any kind to implement a crew management program is considerably diminished, if not eliminated. Also, if missions are to be staged from forward areas, thereby eliminating the need for missions in excess of ten to twelve hours, the undersigned naturally sees no justification. But, with missions of the frequency outlined by headquarters' personnel, and with definite plans for IFR missions, then it is the opinion of the undersigned that an optimally prepared pilot needs to be guaranteed, and that only by providing on-site sleeping quarters and other on-site facilities, can this be guaranteed. This is not intended as a contradiction of the stand taken by the undersigned during the Edwards' discussions, but merely a statement of opinion based on a clarification of exactly what will be required of the pilots in terms of future, long-range missions.

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The undersigned will recommend in a revised manual that arrangements be made in advance at forward staging areas for adequate sleeping and eating facilities. This was mentioned in the original manual, but more detail will be outlined.

The undersigned has been informed that the distasteful tubes of food have been tested, and that according to reports, no abnormalities were found. Even so, if the food is not to the satisfaction of the pilots, an attempt should be made to determine and eliminate the cause of the dissatisfaction.

II. Basically, the Edwards' group and the undersigned are in agreement with the general areas discussed in the proposals outlined in referenced manual; that is, pre-flight and long-range management procedures.

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In the area of weight control, it was agreed by [] and the undersigned that some form of control is necessary. Opinions on the means to that end, however, differ slightly. The undersigned can think of no greater incentive for maintenance of proper physical condition than administrative actions providing for grounding of the pilot if stipulated levels or categories are not maintained. It is fully appreciated that weight control, alone, is not the end, in and of itself, in accomplishing crew fitness, but it is considered to be a most important means to that end. If weight control measures are to be specified, it is agreed that corrective actions must be outlined in much greater detail than set forth in referenced manual. In dealing with such a small number of people,

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[] and the undersigned agreed that a more individualized ideal weight should be determined than that provided by average population or actuary studies. Since the Lovelace Clinic is in possession of rather complete information on the physical status of these pilots, it was agreed that the Clinic should be asked to provide, on an individualized basis, the ideal body weight for each of these pilots, and that corrective or administrative actions be centered around these determinations. Until such information is available, it will be recommended by the undersigned that the actuary studies as outlined in referenced manual be used as a guideline by the flight surgeon in advising the pilots on weight control, but that no grounding action be taken until the ideal weight standards are obtained from the Clinic. These will be requested by headquarters as soon as possible. Also, an escape clause should be entered into the proposals, whereby if an operational need arises for a grounded pilot, he could be allowed to fly at the discretion of the local flight surgeon. Specific proposals will be outlined in a revised manual. Also, periodic weighing of all pilots will be mandatory, if such a program is to accomplish its intended purposes.

A vital part of this program will be a physical conditioning or exercise program in conjunction with weight control. Since categorization of states of physical fitness or competence is rather nebulous, it is felt that no specific requirements can be levied in this area of management

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procedures. However, the undersigned will suggest, again, that the USAF [] plan or a reasonable facsimile, thereof, be utilized by the flight surgeon in advising the pilots on physical competence. Pilots should be strongly urged to avail themselves of the gymnasium facilities at Edwards' main base, which are available to them. This would eliminate the need for construction of a separate gymnasium on North Base.

Agreement was reached that annual physical examinations should be accomplished as outlined in referenced manual. If operational conditions warrant, the sixty day prior to birthday-examining-date could be adjusted accordingly.

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Physiological training should be accomplished as outlined in referenced manual. The rationale underlying inclusion of partial pressure suit indoctrination in this training was raised by [] This serves no useful purpose, other than to make the indoctrination a matter of record. For this reason alone, and in the absence of any other record, the undersigned recommends its continuation.

In the area of pre-flight sleep, the question arose as to the necessity or value of ten hours' sleep prior to a long mission. It is the opinion of the undersigned that rest-activity cycles should be adjusted so that the pilot will beneficially sleep approximately this number of hours prior to any ten to sixteen hour mission. It is fully realized that some variations of one, two, or even more hours are inescapable, but every effort should be made to conform to these suggestions, in order to provide a well rested pilot.

In the area of pre-flight physical examinations, it is recommended by the undersigned that the basic format outlined in referenced manual be followed, and as stated in the proposed manual be made a part of the flight surgeon's records. Questions arose on specific items of the format; these involved primarily laboratory procedures such as urinalysis, hemoglobin, hematocrit, and eosinophil counts. At the suggestion of [] the undersigned is willing to eliminate the hematocrit determination, since this would require the use of too much equipment and since no real rationale exists for both hemoglobin and hematocrit determinations. The rationale behind the undersigned's suggestion for eosinophil counts are outlined quite specifically in the referenced manual. Attention is called to the further suggestion in the manual that this be discontinued if it proves valueless. Since hemoglobin and eosinophil determinations will entail sticking the pilots' fingers for blood samples, some opposition might be encountered from the pilots. Also in forward staging areas, this might be impractical. Too, with the frequency of flights, these procedures might become somewhat monotonous for the pilots. If significant opposition is encountered from the pilots, the hemoglobin and eosinophil studies could be discontinued. However, it is the opinion of the undersigned that nothing can be lost and everything is to be gained by doing as adequate and thorough physical examination as is possible.

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There is no disagreement, of course, on this point. Admittedly, the undersigned cannot give a specific justification for repetition of every item outlined in the proposals on each examination, but it is felt that an examination should be as complete as is feasible for the specific purpose at hand. Suggestions were made for elimination of some items of the physical examination. If an effort is going to be made to eliminate every item not considered essential, one might question, for example, the validity or necessity of annual physical examination, in the absence of presenting symptoms. Needless to say, these have proven their worth many times over. The undersigned recommends that the examinations, as outlined, be done, with additions as deemed necessary by the local flight surgeon. Also, the question arose as to what happens to the pre-flight physical examination if the flight surgeon is not in attendance at the staging area. In this event, it is felt by the undersigned that the pilot should receive a thorough physical examination before leaving the area where the flight surgeon is available, and that this evaluation be made a part of the flight surgeon's records. Funds should be provided whereby the flight surgeon can buy any equipment needed for the simple, laboratory procedures outlined.

III. In consideration of construction of facilities for implementing crew management, mention might be made briefly of the facilities available and currently used at North Base: flight surgeon's office; personal equipment section -- office, pre-breathing area, storage; lounge; repair room for contractor; operations or flight planning; briefing room; and latrines and shower stall. The primary areas lacking are kitchen; sleeping area; massage room; and recreational area. A kitchen is badly needed, together with a chef to perform the duties of food preparation. If a cook is provided, he perhaps could serve as a masseur, if a massage room is to be constructed. The following structures exist as possibilities for a sleeping area. The main objective in a sleep area to be considered is the provision of comfort and freedom from noises.

A. A house-trailer, presently within the North Base complex is available. Air-conditioning and heating facilities will have to be renovated; also plumbing facilities made adequate. The trailer could be lined with acoustical ceiling at very little cost, and moved into close proximity to the existing bunge.

B. The trailer referenced above could be renovated and moved into old Hangar II which would provide, in itself, some attenuation of the noise levels. However, this hangar is located approximately two hundred yards outside the North Base complex.

C. Rooms already existent in Hangar II could be renovated, with repair to plumbing facilities, ceiling, etc.

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From the standpoint of practicality and economics, the most logical solution would be to renovate the trailer and move it into close proximity to the lounge; build a small kitchen and massage room adjacent to the existing building, and also a small recreation-workout area. Noise level attenuations provided by acoustical ceiling and floors (?) could be determined. If modification of the trailer as suggested would not provide sufficient decrease in noise levels, another room could be added in conjunction with the aforementioned, in whichever effort should be made from an engineering standpoint to make it as nearly sound-proof as possible.

However, if complete and first-class facilities are desired, space is available for construction of an entirely new building to include the necessary areas mentioned above. Facilities should be such that two pilots could be prepared for any given mission. It is felt, however, that construction of structure of this magnitude is not justified, since some of the existent facilities are adequate.

IV. One of the most important parts of this program will be to make the pilots, themselves, realize the reasons behind crew management, and also realize that the majority of the measures proposed are already in essence complied with by the pilots. The Edwards' group and the undersigned are aware of the opposition of the pilots to any form of crew management. This program is intended primarily as a guarantee that all possible efforts are expended to insure the safety and well-being of the pilot and the success of the mission. With this in mind, it is hoped that the efficiency and motivation of the pilots will not be compromised as a result of instituting referenced proposals.

A revised manual will be prepared and forwarded for comments, and approval or disapproval, incorporating the changes cited above. General Flickinger will be asked to review same and recommend any changes he deems necessary. Also, the Edwards' group at North Base will be asked for further comments and suggestions before the implementation of these proposals.

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Distribution:

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- #3 - Brig. Gen. Don Flickinger
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